FEDERAL URDU UNIVERSITY
OF
SCIENCE & TECHNOLOGY

Mid Term Exam******* Spring Semester 2014

Subject: Numerical Scientific Computation

Program: BSCS [6th-b (SS)]

Time Allowed: One & half Hour

Total Marks: 30

Attempt all five (05) Questions.

Q1. Use Newton's method to approximate, upto four decimal places the root of

$\Rightarrow 2.1038$

$$f(x) = x^3 - 3x - 3 \qquad with \; x_0 = 2$$

Q2. Use Secant method to approximate, upto three decimal places the root of

$\Rightarrow 2.941$

$$f(x) = x^3 - 9x + 1 \qquad with \; x_0 = 3, \; x_1 = 4$$

Q3. Use method of false position, upto four decimal places the root of $\quad \Rightarrow 0.4950$

$$f(x) = sinx - 5x + 2 \qquad with \; x_0 = 0.4, \; x_1 = 0.6$$

Q4. Use Simpson's Rule to approximate the given integral. $\quad \Rightarrow 0.8540$

$$\int_0^2 \frac{dx}{1 + x^3} \qquad n = 4$$

Q5. Use Trapezoidal Rule to approximate the given integral. $\quad \Rightarrow 0.8365$

$$\int_0^2 \frac{dx}{1 + x^3} \qquad n = 4$$